

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions, and listings, of claims in the captioned patent application:

Listing of Claims:

1. (Currently Amended) An elongate electrode array device for implantation into a cochlea, comprising:
 - an elongate carrier member;
 - at least one electrode mounted on said carrier member; and
 - a tip member comprising a flexible conical tapered portion tapering and extending distally from a distal end of said elongate carrier member, wherein said tip member is configured such that said tip member prevents substantial foldover of said tip when a deflection/impact force is applied to said tip member during implantation into the cochlea.
2. (Previously Presented) The device of claim 1, wherein said tip member further comprises:
 - a barrel portion at a proximal end of said conical tapered portion; and
 - a blunt end portion at a distal end of said conical tapered portion.
3. (Original) The device of claim 2, wherein said barrel portion is substantially cylindrical in shape.
4. (Original) The device of claim 3, wherein said elongate member distal end has a greater diameter or minimum width than the diameter of said barrel portion, wherein a liquid silicone rubber adhesive is used to adhere said tip member to said elongate member, and wherein said liquid silicone rubber adhesive is used to form a tapered region in a gap formed by said elongate member distal end and said barrel portion.
5. (Previously Presented) The device of claim 2, wherein said barrel portion is about 0.4 mm in length.

6. (Previously Presented) The device of claim 2, wherein said barrel portion is about 0.45 mm in diameter.
7. (Cancelled)
8. (Previously Presented) The device of claim 2, wherein said conical tapered portion tapers continuously.
9. (Previously Presented) The device of claim 2, wherein the proximal-to-distal length of said conical tapered portion is about 0.76 mm.
10. (Previously Presented) The device of claim 2, wherein said diameter of said conical tapered portion decreases from about 0.45 mm at a proximal end of said conical tapered portion to about 0.2 mm at said distal end of said conical tapered portion.
11. (Previously Presented) The device of claim 2, wherein the angle between notional diametrically opposed sides of said conical tapered portion is about 18.9°.
12. (Previously Presented) The device of claim 2, wherein said blunt end portion has a part-ellipsoidal shape.
13. (Previously Presented) The device of claim 2, wherein said blunt end portion has a part-spherical shape.
14. (Previously Presented) The device of claim 2, wherein said tip member is integral with said elongate member.
15. (Previously Presented) The device of claim 2, wherein said tip member is mounted on said distal end of said elongate carrier member.

16. (Previously Presented) The device of claim 2, wherein said tip member comprises:
a lumen radially-disposed within said tip member.

17. (Previously Presented) The device of claim 16, wherein said elongate carrier member further comprises:

a lumen extending therethrough, said lumen configured to allow a stiffening element to be inserted through said elongate carrier member and to allow a distal end of said stiffening element to extend into said lumen in said tip member.

18. (Cancelled)

19. (Cancelled)

20. (Original) The device of claim 1, wherein said tip member has substantially uniform bending stress distribution in an axial direction.

21. (Original) The device of claim 1, wherein said tip member is adhered to said elongate member using a liquid silicone rubber adhesive.

22. (Cancelled)

23. (Cancelled)

24. (Currently Amended) A method for making an elongate electrode array device for implantation into a cochlea, the method comprising:

providing an elongate carrier member having at least one electrode mounted thereon; and mounting a flexible conical tapered tip member on a distal end of said elongate member so that said tip member tapers and extends distally from said distal end of said elongate carrier member, wherein said tapered tip member is configured such that said tip member prevents substantial foldover of said tip when a deflection/impact force is applied to said tip member during implantation into the cochlea.

25. (Previously Presented) The method of claim 24, wherein said mounting comprises:

adhering said tip member to said elongate member using a liquid silicone rubber adhesive.

26. (Original) The method of claim 25, wherein said elongate member distal end has a greater diameter or minimum width than the diameter of said barrel portion, and wherein said method further comprises using said liquid silicone adhesive to form a tapered region in a gap formed by said elongate member distal end and said barrel portion.

27. (Cancelled)

28. (Previously Presented) The method of claim 24, wherein said electrode is part of a means for applying a tissue stimulation.

29. (Currently Amended) An elongate electrode array device for implantation into a cochlea, the device being subject to deflection/impact forces during implantation, comprising:

- an elongate carrier member;
- at least one electrode mounted on said carrier member; and
- a flexible conical tapered tip member extending distally from a distal end of said elongate carrier member, said tip member dimensioned such that said tip member operates as a constant-strength cantilever beam when the deflection/impact forces are applied to said tip member during implantation.

30. (Previously Presented) The device of claim 29, wherein bending stresses through said tip member are substantially equal to bending stresses at the junction of said tip member and said elongate carrier member.

31. (Previously Presented) The device of claim 29, wherein said elongate carrier member and said tip member have cross-sections that maximize alignment between said elongate carrier member and said tip member when said tip member is attached to said elongate carrier member during production.

32. (Previously Presented) The device of claim 29, wherein said elongate carrier member is substantially tubular, and wherein said tip member has a substantially circular cross-section.

33. (Previously Presented) The device of claim 29, wherein said tip member has a portion that is partially conically tapering.

34. (Previously Presented) The device of claim 29, wherein said tip member comprises:

- a barrel portion at a proximal end of said tip member;
- a conical tapered portion at a distal end of said barrel portion, said conical tapered portion tapering distally; and
- a blunt end portion at a distal end of said tapered portion.

35. (Previously Presented) The device of claim 34, wherein said barrel portion is substantially cylindrical in shape.

36. (Previously Presented) The device of claim 35, wherein said elongate member distal end has a greater diameter or minimum width than the diameter of said barrel portion, wherein a liquid silicone rubber adhesive is used to adhere said tip member to said elongate member, and wherein said liquid silicone rubber adhesive is used to form a tapered region in a gap formed by said elongate member distal end and said barrel portion.

37. (Previously Presented) The device of claim 34, wherein said barrel portion is about 0.4 mm in length.

38. (Previously Presented) The device of claim 34, wherein said barrel portion is about 0.45 mm in diameter.

39. (Previously Presented) The device of claim 34, wherein said tapered portion tapers continuously.

40. (Previously Presented) The device of claim 34, wherein the proximal-to-distal length of said conical tapered portion is about 0.76 mm.

41. (Previously Presented) The device of claim 34, wherein said diameter of said conical tapered portion decreases from about 0.45 mm at a proximal end of said conical tapered portion to about 0.2 mm at said distal end of said conical tapered portion.

42. (Previously Presented) The device of claim 34, wherein the angle between notional diametrically opposed sides of said tapered portion is about 18.9°.

43. (Previously Presented) The device of claim 34, wherein said blunt end portion has a part-ellipsoidal shape.

44. (Previously Presented) The device of claim 34, wherein said blunt end portion has a part-spherical shape.
45. (Previously Presented) The device of claim 34, wherein said tip member is integral with said elongate member.
46. (Previously Presented) The device of claim 34, wherein said tip member is mounted on said distal end of said elongate carrier member.
47. (Previously Presented) The device of claim 34, wherein said tip member comprises:
a lumen radially-disposed within said tip member.
48. (Previously Presented) The device of claim 47, wherein said elongate carrier member further comprises:
a lumen extending therethrough, said lumen configured to allow a stiffening element to be inserted through said elongate carrier member and to allow a distal end of said stiffening element to extend into said lumen in said tip member.
49. (Previously Presented) The device of claim 34, wherein said tip member has substantially uniform bending stress distribution in an axial direction.
50. (Previously Presented) The device of claim 34, wherein said tip member is adhered to said elongate member using a liquid silicone rubber adhesive.
51. (Previously Presented) The device of claim 2, wherein said lumen radially-disposed within said tip member is about 0.4 mm in length.
52. (Previously Presented) The device of claim 2, wherein said lumen radially-disposed within said tip member is about 0.125 mm in diameter.

53. (Previously Presented) The device of claim 2, wherein said blunt end portion is about 0.04 mm in length.

54. (Previously Presented) The device of claim 2, wherein said diameter of said blunt end portion decreases from about 0.2 mm at a proximal end of said blunt end portion to about 0.0 mm at said distal end of said blunt end portion.

55. (Previously Presented) The device of claim 34, wherein said lumen radially-disposed within said tip member is about 0.4 mm in length.

56. (Previously Presented) The device of claim 34, wherein said lumen radially-disposed within said tip member is about 0.125 mm in diameter.

57. (Previously Presented) The device of claim 34, wherein said blunt end portion is about 0.04 mm in length.

58. (Previously Presented) The device of claim 34, wherein said diameter of said blunt end portion decreases from about 0.2 mm at a proximal end of said blunt end portion to about 0.0 mm at said distal end of said blunt end portion.

59. (Previously Presented) An elongate electrode array device for implantation into a cochlea, comprising:

an elongate carrier member formed of a first material;
at least one electrode mounted on said carrier member; and

a tip member comprising a flexible conical tapered portion extending distally from a distal end of said elongate carrier member configured such that said tip member prevents substantial foldover of said tip when a deflection/impact force is applied to said tip member during implantation into the cochlea, wherein said tip member is formed of a second material that is different than said first material, wherein the proximal-to-distal length of said conical tapered portion is about 0.76 mm, and further wherein the diameter of said conical tapered portion decreases from about 0.45 mm at a proximal end of said conical tapered portion to about 0.2 mm at said distal end of said conical tapered portion.

60. (Previously Presented) The device of claim 59, wherein said first material has substantially the same flexibility as said second material.

61. (Previously Presented) The device of claim 59, wherein said first material has a relatively greater stiffness than said second material.

62. (Previously Presented) The device of claim 59, wherein said first material is configured to undergo a decrease in stiffness upon implantation into the cochlea.

63-64. (Cancelled)